

REMARKS

Attached hereto is a marked-up version of the changes made to the specification and claims by the current amendment. The attached page(s) is captioned "**Version With Markings To Show Changes Made.**"

Claims 1-18 stand either rejected or objected to in the outstanding Official Action. As related below, the Patent Office has failed to examine pending claims 1-17 in the §371 application, as claims 1-17 are the claims pending (they were forwarded by WIPO and were attached to the International Preliminary Examination Report, but apparently not entered into the application by the U.S. Patent Office PCT clerical staff). As a result, claims 1-17 are the only claims remaining in this application.

Telephone Interview With Examiner and Supervisory May 8, 2002

In a telephone interview with both Examiner Inzirillo and Supervisor Ip, it was pointed out that the Official Action considered claims 1-18 and in fact only claims 1-17 were actually pending in this application. Upon further investigation, it was determined that the claims the Examiner examined were claims 1-18, which were the claims attached to the application when originally published. Subsequent to publication and prior to entry of the national phase, the applicant amended the PCT application on July 9, 1999 by submitting an entirely new set of claims 1-17 as replacements for originally filed claims 1-18. Therefore, upon National Phase entry, only the amended claims 1-17 were pending in the WIPO forwarded application.

During the telephone discussion with Examiner Inzirillo, it was determined that the International Preliminary Examination Report was present in the U.S. Patent and Trademark Office file, and the proper claims numbered 1-17 were actually still attached to the IPER and were stamped "AMENDED SHEET" at the bottom of each page. It was agreed that the Examiner would have claims 1-17 substituted for the originally considered claims 1-18 by the clerical staff. It was further agreed that applicant would respond to the outstanding Official Action as though this application were intended to refer to pending claims 1-17 which should have been considered by the Patent Office in the first Official Action. It was also agreed that there would be no second action Final Rejection, because the first action did not consider claims 1-17 which are presently pending in this §371 national phase application.

The Examiner's acknowledgment of applicants' claim for priority and receipt of the certified copy of the priority document in the national stage application is very much appreciated.

The failure to enter the Preliminary Amendment is understandable, as it was directed towards claims 1-17 which were pending, rather than the claims 1-18 which, although not pending, were apparently considered by the Examiner. In order to avoid confusion, applicants have resubmitted each of the three claim amendments which avoids all multiple dependent claims and multiple dependent claim problems.

It is noted that applicants original cover sheet, based upon the Preliminary Amendment, did not include any payment for multiple dependent claims and no multiple

dependent claim fee should have been charged by the PTO. Entry and consideration of the amendments to claims 3, 9 and 16 is respectfully requested.

The claim objections are similarly understandable, in that the wrong claims were considered by the Patent Office. Applicants believe that, as currently amended, pending claims 1-17 are in proper form, because there are no multiple dependent claims and therefore consideration of these claims on the merits is respectfully requested.

Claims 1, 2, 3, 6 and 7 stand rejected as being anticipated by Tucker (U.S. Patent 5,440,577). As correctly noted by the Examiner, Tucker "is a series of connected semiconductor lasers. . . ." However, what was not present in claim 1 examined by the Examiner and what is present in the claim 1 which should have been examined by the Examiner is the phrase "each of the light emitting means having a respective optical waveguide."

The above limitation requiring separate waveguides clearly distinguishes the Tucker invention. Tucker utilizes active region 14 as an optical waveguide (column 4, lines 3-6). In fact, in every one of Tucker's embodiments, he appears to illustrate that the active regions of the laser sections are optically connected together sharing an optical waveguide. Applicants found that, instead of optically coupling a plurality of light emitting means, there are advantages in terms of gain for the device and a reduction in susceptibility to failure if the light emitting means are not coupled to the same waveguide.

Accordingly, applicants' claims, as originally submitted in the United States (claims 1-17 which should have been considered), specifically recite that each of the light

emitting means has "a respective optical waveguide." The fact that these light emitting means are arranged such that "the light emitting means do not share a common optical waveguide" confirms that the invention set out in claim 1 is the opposite of that described in the Tucker reference in which all light emitters share a common optical waveguide.

Not only is the structure shown in the Tucker reference significantly different from applicants' claimed structure (thereby obviating any future rejection under §102), but the Tucker reference actually teaches away from applicants' claimed combination of elements (thereby avoiding any argument that the claimed invention is obvious in view of Tucker).

Applicants' statements that the light emitting means do not share a common optical waveguide and that the individual light emitting means have "respective optical waveguides" is believed to clearly indicate that the active regions of the light emitting means are not optically connected together so as to guide light output from one light emitting means to the active region of another light emitting means. This previous practice (and that disclosed in Tucker) serves to reduce the efficiency of each light emitter.

Of course, once light has been output from the individual light emitting means, it may be coupled into a single waveguide which also couples the light provided by the other light emitting means. This is further explained and discussed on page 16, last paragraph. Should the Examiner be of the opinion that other language would more clearly indicate this structural interrelationship which is responsible for the benefit of the present invention, applicants will certainly consider any proposed additional language correction.

Claims 8, 9, 15 and 16 stand rejected under 35 USC §103 as unpatentable over Tucker as previously applied. Because all of these claims depend ultimately from claim 1, the above comments distinguishing over the Tucker reference are herein incorporated by reference.

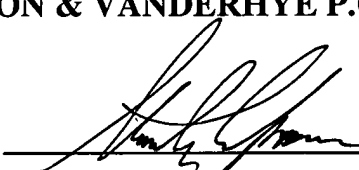
The Patent Examiner's consideration after realization of the apparent PCT clerical staff error is very much appreciated. Applicants look forward to the first examination of claims 1-17 as amended in the attached amendment, taking into consideration the above points made with respect to the Tucker reference.

Having responded to all objections and rejections set forth in the outstanding Official Action, it is submitted that claims 1-17 are the only claims remaining in this application and are in condition for allowance. In the event the Examiner is of the opinion that a brief telephone or personal interview will facilitate allowance of these claims, he is respectfully requested to contact applicants' undersigned representative.

Respectfully submitted,

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VERSION WITH MARKINGS TO SHOW CHANGES MADE

IN THE SPECIFICATION

Page 1, between the title and line 1:

BACKGROUND OF THE INVENTION

1. Field of the Invention

Page 1, above the paragraph beginning at line 8:

2. Discussion of Prior Art

Page 4, above the paragraph beginning at line 1:

SUMMARY OF THE INVENTION

Page 4, the paragraph beginning at line 14:

In a preferred embodiment, the light emitting means may be electrically connected such that the input impedance of the light emitting device is substantially equal to 50 Ω without additional circuitry or impedance matching elements.

Page 4, the paragraph beginning at line 17:

The light emitting means, having a modulation frequency limit, wherein the input impedance of the light emitting device is substantially equal to 50 Ω across a frequency range substantially from DC to the modulation frequency limit of each of the light emitting means.

Page 7, above the paragraph beginning at line 1:

BRIEF DESCRIPTION OF THE DRAWINGS

Page 8, above the paragraph beginning at line 1:

DETAILED DISCUSSION OF EMBODIMENTS

Page 17, the paragraph beginning at line 1:

This may be of particular advantage in the field of fibre optic links where signal insertion losses into fibre may be reduced. Furthermore, the individual elements in the laser device may be coherently locked such that coherent summation into a single passive waveguide output is obtained for input to a single optical fibre. [The] This is more convenient than having to use a ribbon of optical fibres.

IN THE CLAIMS

3. (*Amended*) The light emitting device of Claim 1 [or Claim 2], wherein the light emitting means (2a, 2b) are electrically connected such that the input impedance of the light emitting device is substantially equal to 50 Ω without additional circuitry or impedance matching elements.

9. (*Amended*) An optically coupled transistor (18) for generating an output electrical signal comprising;

the light emitting device (1; 21) of [any of claims 1-4] Claim 1 for emitting at least two beams of output radiation (29) and

at least one photodetector (23) for detecting the beams of radiation output (29) from the light emitting device (1) and for converting the beams of output radiation (29) into an output electrical current I_c),

wherein the light emitting device (1) and the at least one photodetector (23) are arranged such that there is no electrical feedback from the at least one photodetector (23) to the light emitting device (1).

16. (*Amended*) An optical repeater for receiving an optical input signal and generating one or more optical output signals comprising;

a photodetector (23) for receiving the optical input signal and converting the optical input signal into an electrical signal and

the light emitting device (1) of [any of Claims 1-4] Claim 1 for receiving the said electrical signal and outputting one or more optical signals.